## REMARKS

These remarks are in response to the Office Action dated September 23, 2003, which has a shortened statutory period for response set to expire December 23, 2003. A one-month extension of time, to expire January 23, 2004, is requested in a petition filed herewith.

### Drawings

The drawings are objected to under 37 CFR § 1.83(a). The Examiner writes:

> The drawings must show every feature of the invention specified in the claims. Therefore, the recited feature "the vias are uniformly distributed on both an X axis and a Y axis of the LCD" of claim 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
>
> A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

On the attached sheets, Fig. 3 is amended to show the vias 16 uniformly distributed along both the X axis and the Y axis of the LCD display. In particular, an additional reference to the spacing between the vias (x1, 22a) is added between two vias of adjacent mirrors. Although FIG. 3 is not drawn to scale, support for this amendment is provided in Applicant's specification at least in the paragraph beginning at Page 5, line 27, which recites (in-part) "...the vias 16 in this example have a mirror spacing (X1) 22a along the Y axis 28 which is ½ P...." No new matter is entered. An annotated marked-up drawing is provided for the Examiner's convenience, showing the drawing change in red ink.

### Specification

The specification is amended to correct a typographical error. No new matter is entered.

### Abstract

The abstract is amended to correct a typographical error in the heading from "ABSTACT" to "ABSTRACT". No new matter is entered.

Claims

Claims 1-20 are pending in the above-identified application. Claims 1-4, 8-12, and 14-17 are rejected, and Claims 5-7, 13, and 18-20 are objected to. Claims 1, 5-13, and 15-20 are amended and Claims 21-31 are added. Claims 2-4 and 14 remain as filed. Claims 5-7, 13, and 16-20 are indicated to include allowable subject matter. Reconsideration is respectfully requested, in view of the amendments and comments made herein.

Rejections Under 35 U.S.C. § 112

Claims 8, 16, and 17 are rejected under 35 U.S.C. § 112, second paragraph. The Examiner writes:

> Claims 8, 16, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
>
> In claim 8, it is unclear which element, the vias or the center, being on at least one of an X axis and Y axis of the imaging surfaces. In claim 16 and 17, it is unclear whether the second axis is the at least one axis of claim 15 or a different axis. If the second axis is a different axis, claim 17 is indefinite because the vias cannot meet the two recited arrangements at the same time.

Applicant respectfully requests reconsideration in view of the amendments made herein.

Claim 8:

Claim 8 is amended to clarify that the vias are disposed on at least one of an X axis and Y axis of the imaging surfaces. Therefore, Applicant respectfully requests withdrawal of the rejection of Claim 8 under 35 U.S.C. §112.

Claims 15-17:

Claims 16 and 17 depend directly from Claim 15. Claim 15 is amended to recite "a first axis" thereby clarifying that the "second axis" recited in Claim 16 is a different axis than the "first axis" of Claim 15. Therefore, Claim 16 is now believed to be definite.

Claim 17 is amended herein and recites (in part) "the vias of each imaging surface are aligned along an axis of each respective imaging surface, the axes of the imaging surfaces being

parallel to one another." Applicant believes that amended Claim 17 is definite because the vias can now meet the limitations of both Claims 15 and 17. For example, the vias of FIG. 4 are symmetrically arrayed along the X axis (Claim 15) and are grouped near the centers of their respective mirrors along parallel Y axes of the mirrors (Claim 17).

For the above reasons Applicant requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 112.

Rejections Under 35 U.S.C. § 102

Claims 1-4, 8, 11, 12, 14, and 15 are rejected under 35 U.S.C. § 102 (b) as being anticipated by Sato et al. (US 6,081,305). The Examiner writes (in part):

> Note Fig. 2 which identically disclose the claimed LCD array having a metal circuitry layer 141 separated from a plurality of imaging surfaces 181 by an insulating layer, two vias (151, 171) between the metal layer and each of the imaging surfaces wherein the vias 151 is an electrical connection (via elements 164 and 171) between the metal layer and the imaging surfaces. ... As to the limitation "the vias are evenly distributed on the imaging surfaces" of claim 11, this limitation is broadly interpreted as "not positioned at the same edge of the imaging surfaces". As apparent from Fig. 2, if one axis (X or Y) is selected at the center of element 164, the vias 151 and 171 are considered as symmetrically arrayed with respect to that axis or center.

Applicant respectfully requests reconsideration in view of the amendments made herein.

The standard for anticipation is set forth in M.P.E.P. § 2131 as follows:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claim 1:

As amended, Claim 1 now recites (emphasis added):

> 1. An LCD array having a metal circuitry layer separated from a plurality of imaging surfaces by an insulating layer, comprising:
> a plurality of vias between the metal layer and each of the imaging surfaces; and
> **wherein each of the vias passes through the insulating layer.**

As the Examiner correctly points out, original Claim 1 was anticipated by Sato et al. because the cited reference discloses each of imaging surfaces 181 connected to metal layer 141 in series by vias 151 and 171 that pass through separate insulating layers 150 and 170, respectively. However, it was not Applicant's intention to claim a plurality of vias in series between a metal layer and an imaging surface, but rather a plurality of vias through the insulating layer underlying the imaging surface. Accordingly, Claim 1 is amended to include the limitation "wherein each of the vias passes through the insulating layer." Sato et al. do not disclose that both vias 151 and 171 pass through either of insulating layers 150 and/or 170. Therefore, because Sato et al. do not teach every element of amended Claim 1, Sato et al. do not anticipate amended Claim 1. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 1 under 35 U.S.C. §102(b).

Claims 2-4, and 8 depend directly from Claim 1, and are therefore distinguished from the cited prior art for at least the reasons provided above with respect to Claim 1.

Claim 11:

As amended herein, Claim 11 now recites (emphasis added):

> 11. In an LCD array having a plurality of imaging surfaces separated from a metal layer by an insulating layer, an improvement comprising:
> providing a plurality of vias between the metal layer and each of the imaging surfaces such that the vias are evenly distributed on the imaging surfaces **and pass through the insulating layer.**

As amended herein, Claim 11 recites that the vias of each of the imaging surfaces "pass through the insulating layer" of the LCD array. Therefore, for the same reasons provided above

with respect to amended Claim 1, Sato et al. does not anticipate amended Claim 11. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 11 under 35 U.S.C. §102(b).

Claims 12, 14, and 15 depend directly from Claim 11 and are therefore distinguished from the cited prior art for at least the reasons provided above with respect to Claim 11.

Claims 9 and 10 are rejected under 35 U.S.C. § 102 (e) as being anticipated by Ichimura (US 6,181,397). The Examiner writes:

> Note Figs. 5A-B which identically disclose the claimed method comprising the steps of placing the vias 30 such that the vias are evenly spaced from the center of the mirrors 13a with respect to both an X (116) and axis and a Y (111) axis.

Applicant respectfully requests reconsideration in view of the amendments made herein.

As amended herein, Claim 9 recites (emphasis added):

> 9. A method for positioning vias under mirrors of an LCD array, comprising:
> **placing a plurality of vias under each of a plurality of mirrors** such that the vias are evenly spaced from the center of each respective mirror with respect to both an X axis and a Y axis of the respective mirror.

Claim 9 is amended to clarify the step of "placing a plurality of vias under each of a plurality of mirrors..." of the LCD array. Ichimura does not teach placing a plurality of vias under each of a plurality of mirrors of an LCD array. In contrast, Ichimura discloses using only a single via per mirror (e.g., FIGs. 2, 4G, 5A, etc.). Therefore, because Ichimura does not teach all the limitations of Claim 9, Ichimura does not anticipate amended Claim 9.

Claim 10 is amended herein to conform to the amendments made to Claim 9 and to correct an erroneous reference to Fig. 9 instead of Claim 9. Claim 10 depends directly from Claim 9 and is therefore distinguished from the cited prior art for at least the reasons provided above with respect to Claim 9.

For the above reasons Applicants request reconsideration and withdrawal of the rejections under 35 U.S.C. § 102.

Newly Added Claims 21-31:

Claims 21-31 are added. As indicated by the Examiner, Claims 5-7, 13, and 18-20 are objected to, but would be allowable if rewritten in independent form including the limitations of their respective base claims and any intervening claims. The Examiner also indicates that Claims 16 and 17 would be allowable if cast in independent form and amended to overcome the rejections under 35 U.S. C. § 112.

Accordingly, original Claims 5-7, 13, and 16-20 are rewritten as new Claims 21-23, 24, and 25-29, respectively. Claims 5 and 6 are cast in independent form as Claims 21 and 22, including the limitations of original base Claim 1. Claim 23 (corresponding to original Claim 7) now depends from Claim 22. Applicant would like to point out that Claim 23 now depends from Claim 22, because as originally filed Claims 6 and 7 claimed substantially the same subject matter. In particular, the claims were identical except for arbitrary labels (X and Y) of the recited axes.

Claims 13 and 16-20 are each cast in independent form as new Claims 24 and 25-29, respectively, and include the limitations of original base Claim 11 and any intervening claims. Additionally, Claims 25 and 26 include the amendments to Claims 16 and 17 outlined above, which Applicant believes overcome the rejections under 35 U.S.C. § 112.

Applicant would also like to point out that Claims 24 and 26-29 differ from original Claims 13 and 17-20 in that each occurrence of "mirror" has been replaced with "imaging surface" to correspond with the language of original base Claim 11.

Finally, Claims 30-31 are newly added. Applicant believes that Claims 30 and 31 distinguish over the cited prior art for at least the same reasons provided above with respect to Claim 1. For example, Claim 30 recites that "each of the vias pass through the first insulating layer under the imaging surfaces," whereas each via 151 and 171 of Sato et al. pass through different insulating layers 150 and 170, respectively. Also, Claim 31 recites that the vias of each imaging surface "establish parallel electrical connections to each imaging surface," whereas the vias 151 and 171 of Sato et al. establish a series electrical connection through insulating layers 150 and 170. No new matter is entered.

For the forgoing reasons, Applicant believes new Claims 21-31 distinguish over the cited prior art, and are in condition for allowance.

Additional Amendments

Claim 5:

Claim 5 is amended to recite that "the vias are uniformly distributed along both a first direction and a second direction of the LCD array." The amendment to Claim 5 is intended to clarify the claim. No new matter is entered.

Claims 6 and 7:

As originally filed Claims 6 and 7 claimed substantially the same subject matter. Therefore, Claim 6 is amended to recite "a first axis," and Claim 7 is amended to recite "a second axis," and to depend from Claim 6. In addition, Claims 6 and 7 are also amended to clarify the relationship between the vias and the respectvie imaging surfaces that they underly. No new matter is entered.

Claims 12 and 13:

Claims 12 and 13 are amended to clarify the relationships of the vias with respect to the imaging surfaces and/or the LCD array. Additionally, Claim 13 is amended to replace each occurrence of "mirror" with "imaging surface" to conform to the language of base Claim 11. No new matter is entered.

Claims 15 and 16:

In addition to the amendments made above for compliance with 35 U.S.C. § 112, Claims 15 and 16 are amended to clarify that the vias "are symmetrically arrayed about" particular axes of the LCD array. The amendments are intended to clarify the claims. No new matter is entered.

Claims 18-20:

Claims 18-20 are amended to clarify the relationship of the vias with respect to the imaging surfaces and/or the LCD array. No new matter is entered.

For the foregoing reasons, Applicant believes Claims 1-31 are in condition for allowance. Should the Examiner undertake any action other than allowance of Claims 1-31, or if the Examiner has any questions or suggestions for expediting the prosecution of this application, the Examiner is requested to contact Applicant's attorney at (269) 279-8820.

Respectfully submitted,

Date: 1/23/04

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**CERTIFICATE OF MAILING (37 CFR 1.8(A))**

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: 1/23/04

Larry E. Henneman, Jr.